

R317. Environmental Quality, Water Quality.

R317-7. Underground Injection Control (UIC) Program.

R317-7-0. Effective Date and Applicability of Rules.

The effective date of these rules is January 19, 1983 (40 C.F.R. 147.2250). Class II wells are administered by the Division of Oil, Gas and Mining, whose primacy became effective October 8, 1982 (40 C.F.R. 147.2251).

R317-7-1. Incorporation By Reference.

1.1 40 C.F.R. 144.7, 144.13(d), 144.14, 144.16, 144.23(c), 144.32, 144.34, 144.36, 144.38, 144.39, 144.40, 144.41, 144.51 (a)-(o) and (q), 144.52, 144.53, 144.54, 144.55, 144.60, 144.61, 144.62, 144.63, 144.64, 144.65, 144.66, 144.67, 144.68, 144.69, 144.70, and 144.87, July 1, 2000 ed., are adopted and incorporated by reference with the following exceptions:

A. "Director" is hereby replaced with "Executive Secretary".

B. "one quarter mile" is hereby replaced with "two miles".

1.2 40 C.F.R. 146.4, 146.6, 146.7, 146.8, 146.12, 146.13(d), 146.14, 146.32, 146.34, 146.61, 146.62, 146.63, 146.64, 146.65, 146.66, 146.67, 146.68, 146.69, 146.70, 146.71, 146.72, and 146.73, July 1, 2000 ed., are adopted and incorporated by reference with the following exceptions:

A. "Director" is hereby replaced with "Executive Secretary";

B. "one quarter (1/4) mile" and "one-fourth (1/4) mile" are each hereby replaced with "two miles".

1.3 40 C.F.R. Part 148, July 1, [~~1994~~] 2000 ed., is adopted and incorporated by reference with the exception that "Director" is hereby replaced with "Executive Secretary".

1.4 40 C.F.R. Part 261, July 1, [~~1994~~] 2000 ed., is adopted and incorporated by reference.

1.5 40 C.F.R. Part [~~142~~] 141, July 1, [~~1994~~] 2000 ed., is adopted and incorporated by reference.

1.6 40 C.F.R. Part 136 Table 1B, July 1, [~~1994~~] 2000 ed., is adopted and incorporated by reference.

1.7 10 C.F.R. Part 20 Appendix b, Table 11 Column 2, January 1, [~~1994~~] 2000 ed., is adopted and incorporated by reference.

1.8 40 C.F.R. 124.3(a); 124.5(a), (c), (d) and (f); 124.6(a), (c), (d) and (e); 124.8; 124.10(a)(1)ii, iii, and (a)(1)(V); 124.10(b), (c), (d), and (e); 124.11; 124.12(a); and 124.17(a) and (c), July 1, [~~1994~~] 2000 ed., are adopted and incorporated by reference with the exception that "Director" is hereby replaced by "Executive Secretary".

~~[1.9 40 C.F.R. Part 141, July 1, 2000 ed., is adopted and incorporated by reference.]~~

R317-7-2. Definitions.

2.1 "Abandoned Well" means a well whose use has been permanently discontinued or which is in a state of disrepair such that it cannot be used for its intended purpose or for observation purposes.

2.2 "Application" means standard forms for applying for a permit, including any additions, revisions or modifications.

2.3 "Aquifer" means a geologic formation or any part thereof that is capable of yielding significant water to a well or spring.

2.4 "Area of Review" means the zone of endangering influence or

fixed area radius determined in accordance with the provisions of 40 C.F.R. 146.6.

2.5 "Background Data" means the constituents or parameters and the concentrations or measurements which describe water quality and water quality variability prior to surface or subsurface discharge.

2.6 "Barrel" means 42 (U.S.) gallons at 60 degrees F and atmospheric pressure.

2.7 "Casing" means a pipe or tubing of appropriate material, of varying diameter and weight, lowered into a borehole during or after drilling in order to support the sides of the hole and thus prevent the walls from caving, to prevent loss of drilling mud into porous ground, or to prevent water, gas, or other fluid from entering or leaving the hole.

2.8 "Casing Pressure" means the pressure within the casing or between the casing and tubing at the wellhead.

2.9 "Catastrophic Collapse" means the sudden and utter failure of overlying "strata" caused by removal of underlying materials.

2.10 "Cementing" means the operation whereby a cement slurry is pumped into a drilled hole and/or forced behind the casing.

2.11 "Cesspool" means a "drywell" that receives untreated sanitary waste containing human excreta, and which sometimes has an open bottom and/or perforated sides.

2.12 "Confining Bed" means a body of impermeable or distinctly less permeable material stratigraphically adjacent to one or more aquifers.

2.13 "Confining Zone" means a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone.

2.14 "Contaminant" means any physical, chemical, biological, or radiological substance or matter in water.

2.15 "Conventional Mine" means an open pit or underground excavation for the production of minerals.

2.16 "Disposal Well" means a well used for the disposal of fluids into a subsurface stratum.

2.17 "Drilling Mud" means mud of not less than 36 viscosity (A.P.I. Full Funnel Method) and a weight of not less than nine pounds per gallon.

2.18 "Drywell" means a well, other than an improved sinkhole or subsurface fluid distribution system, completed above the water table so that its bottom and sides are typically dry except when receiving fluids.

2.19 "Exempted Aquifer" means an aquifer or its portion that meets the criteria in the definition of "underground source of drinking water" but which has been exempted according to the procedures of 40 C.F.R. 144.7.

2.20 "Existing Injection Well" means an "injection well" other than a "new injection well."

2.21 "Experimental Technology" means a technology which has not been proven feasible under the conditions in which it is being tested.

2.22 "Fault" means a surface or zone of rock fracture along which there has been a displacement.

2.23 "Flow Rate" means the volume per time unit given to the flow of gases or other fluid substance which emerges from an orifice, pump, turbine or passes along a conduit or channel.

2.24 "Fluid" means material or substance which flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state.

2.25 "Formation" means a body of rock characterized by a degree of lithologic homogeneity which is prevailingly, but not necessarily, tabular and is mappable on the earth's surface or traceable in the subsurface.

2.26 "Formation Fluid" means "fluid" present in a "formation" under natural conditions as opposed to introduced fluids, such as drilling mud.

2.27 "Generator" means any person, by site location, whose act or process produces hazardous waste identified or listed in 40 C.F.R. Part 261.

2.28 "Groundwater" means water below the ground surface in a zone of saturation.

2.29 "Hazardous Waste" means a hazardous waste as defined in R315-2-3.

2.30 "Hazardous Waste Management Facility" means all contiguous land, structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (for example, one or more landfills, surface impoundments, or combination of them).

2.31 "Improved sinkhole" means a naturally occurring karst depression or other natural crevice found in volcanic terrain and other geologic settings which have been modified by man for the purpose of directing and emplacing fluids into the subsurface.

2.32 "Injection Well" means a well into which fluids are being injected for subsurface emplacement of the fluids.

2.33 "Injection Zone" means a geological "formation," group of formations, or part of a formation receiving fluids through a well.

2.34 "Lithology" means the description of rocks on the basis of their physical and chemical characteristics.

2.35 "Monitoring Well" means a well used to measure groundwater levels and to obtain water samples for water quality analysis.

2.36 "New Injection Well" means an injection well which began injection after January 19, 1983.

2.37 "Packer" means a device lowered into a well to produce a fluid-tight seal within the casing.

2.38 "Plugging" means the act or process of stopping the flow of water, oil, or gas into or out of a formation through a borehole or well penetrating that formation.

2.39 "Plugging Record" means a systematic listing of permanent or temporary abandonment of water, oil, gas, test, exploration and waste injection wells, and may contain a well log, description of amounts and types of plugging material used, the method employed for plugging, a description of formations which are sealed and a graphic log of the well showing formation location, formation thickness, and location of plugging structures.

2.40 "Point of injection" means the last accessible sampling point prior to waste fluids being released into the subsurface environment through a Class V injection well. For example, the point of injection of a Class V septic system might be the distribution box - the last accessible sampling point before the waste fluids drain into the

underlying soils. For a dry well, it is likely to be the well bore itself.

2.41 "Pressure" means the total load or force per unit area acting on a surface.

2.42 "Project" means a group of wells in a single operation.

2.43 "Radioactive Waste" means any waste which contains radioactive material in concentrations which exceed those listed in 10 C.F.R. Part 20, Appendix B, Table II Column 2.

2.44 "Sanitary waste" means liquid or solid wastes originating solely from humans and human activities, such as wastes collected from toilets, showers, wash basins, sinks used for cleaning domestic areas, sinks used for food preparation, clothes washing operations, and sinks or washing machines where food and beverage serving dishes, glasses, and utensils are cleaned. Sources of these wastes may include single or multiple residences, hotels and motels, restaurants, bunkhouses, schools, ranger stations, crew quarters, guard stations, campgrounds, picnic grounds, day-use recreation areas, other commercial facilities, and industrial facilities provided the waste is not mixed with industrial waste.

2.45 "Septic system" means a "well" that is used to emplace sanitary waste below the surface and is typically comprised of a septic tank and subsurface fluid distribution system or disposal system.

2.46 "Stratum" (plural strata) means a single sedimentary bed or layer, regardless of thickness, that consists of generally the same kind of rock material.

2.47 "Subsidence" means the lowering of the natural land surface in response to earth movements; lowering of fluid pressure; removal of underlying supporting material by mining or solution of solids, either artificially or from natural causes; compaction due to wetting (Hydrocompaction); oxidation of organic matter in soils; or added load on the land surface.

2.48 "Subsurface fluid distribution system" means an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground.

2.49 "Surface Casing" means the first string of well casing to be installed in the well.

2.50 "Total Dissolved Solids (TDS)" means the total residue (filterable) as determined by use of the method specified in 40 C.F.R. Part 136 Table 1B.

2.51 "Transferee" means the owner or operator receiving ownership and/or operational control of the well.

2.52 "Transferor" means the owner or operator transferring ownership and/or operational control of the well.

2.53 "Underground Injection" means a "well injection".

2.54 "Underground Sources of Drinking Water (USDW)" means an aquifer or its portion which:

A. Supplies any public water system, or which contains a sufficient quantity of ground water to supply a public water system; and

1. currently supplies drinking water for human consumption; or
2. contains fewer than 10,000 mg/l total dissolved solids (TDS);

and

B. is not an exempted aquifer. (See Section 7-4).

2.55 "Well" means a bored, drilled or driven shaft whose depth is

greater than the largest surface dimension; or a dug hole whose depth is greater than the largest surface dimension; or an improved sinkhole; or a subsurface fluid distribution system.

2.56 "Well Injection" means the subsurface emplacement of fluids through a well.

2.57 "Well Monitoring" means the measurement, by on-site instruments or laboratory methods, of the quality of water in a well.

2.58 "Well Plug" means a watertight and gastight seal installed in a borehole or well to prevent movement of fluids.

2.59 "Well Stimulation" means several processes used to clean the well bore, enlarge channels, and increase pore space in the interval to be injected thus making it possible for wastewater to move more readily into the formation, and includes:

- (1) surging;
- (2) jetting;
- (3) blasting;
- (4) acidizing; and
- (5) hydraulic fracturing.

R317-7-3. Classification of Injection Wells.

Injection wells are classified as follows:

3.1 Class I

A. Hazardous Waste Injection Wells: wells used by generators of hazardous wastes or owners or operators of hazardous waste management facilities to inject hazardous waste beneath the lowermost formation containing, within two miles of the well bore, an underground source of drinking water;

B. Nonhazardous Injection Wells: other industrial and municipal waste disposal wells which inject nonhazardous fluids beneath the lowermost formation containing, within two miles of the well bore, an underground source of drinking water; this category includes disposal wells operated in conjunction with uranium mining activities.

C. Radioactive waste disposal wells which inject fluids below the lowermost formation containing an underground source of drinking water within two miles of the well bore.

3.2 Class II. Wells which inject fluids:

A. which are brought to the surface in connection with conventional oil or natural gas production and may be commingled with wastewaters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection;

B. for enhanced recovery of oil or natural gas; and

C. for storage of hydrocarbons which are liquid at standard temperature and pressure.

Class II injection wells are regulated by the Division of Oil, Gas and Mining under Oil and Gas Conservation General Rules, R649-5.

3.3 Class III. Wells which inject for extraction of minerals, including:

A. mining of sulfur by the Frasch process;

B. in situ production of uranium or other metals. This category includes only in situ production from ore bodies which have not been conventionally mined. Solution mining of conventional mines such as stopes leaching is included in Class V; and

C. solution mining of salts or potash.

3.4 Class IV

A. Wells used by generators of hazardous wastes or of radioactive wastes, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous wastes or radioactive wastes into a formation which, within two miles of the well, contains an underground source of drinking water;

B. wells used by generators of hazardous wastes or of radioactive wastes, by owners or operators of hazardous waste management facilities, or by owners or operators of radioactive waste disposal sites to dispose of hazardous wastes or radioactive wastes above a formation which, within two miles of the well, contains an underground source of drinking water;

C. wells used by generators of hazardous wastes or by owners or operators of hazardous waste management facilities, to dispose of hazardous wastes which cannot be classified under Section 7-3.1(A) or 7-3.4(A) and (B) of these rules (e.g. wells used to dispose of hazardous wastes into or above a formation which contains an aquifer which has been exempted).

3.5 Class V. Injection wells not included in Classes I, II, III, or IV. Class V wells include:

A. air conditioning return flow wells used to return to the supply aquifer the water used for heating or cooling in a heat pump;

B. large capacity cesspools, including multiple dwelling, community or regional cesspools, or other devices that receive sanitary wastes, containing human excreta, which have an open bottom and sometimes have perforated sides. The UIC requirements do not apply to single family residential cesspools nor to non-residential cesspools which receive solely sanitary wastes and have the capacity to serve fewer than 20 persons per day;

C. cooling water return flow wells used to inject water previously used for cooling;

D. drainage wells used to drain surface fluid, primarily storm runoff, into a subsurface formation;

E. dry wells used for the injection of wastes into a subsurface formation;

F. recharge wells used to replenish the water in an aquifer;

G. salt water intrusion barrier wells used to inject water into a fresh water aquifer to prevent the intrusion of salt water into the fresh water;

H. sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines, whether what is injected is radioactive waste or not;

I. septic systems used to inject the waste or effluent from a multiple dwelling, business establishment, community, or regional business establishment septic tank. The UIC requirements do not apply to single family residential septic system wells, nor to non-residential septic system wells which are used solely for the disposal of sanitary waste and have the capacity to serve fewer than 20 persons per day;

J. subsidence control wells (not used for the purpose of oil or natural gas production) used to inject fluids into a non-oil or gas

producing zone to reduce or eliminate subsidence associated with the overdraft of fresh water;

K. stopes leaching, geothermal and experimental wells;

L. brine disposal wells for halogen recovery processes;

M. injection wells associated with the recovery of geothermal energy for heating, aquaculture and production of electric power; and

N. injection wells used for in situ recovery of lignite, coal, tar sands, and oil shale.

O. motor vehicle waste disposal wells that receive or have received fluids from vehicular repair or maintenance activities, such as an auto body repair shop, automotive repair shop, new and used car dealership, specialty repair shop (e.g., transmission and muffler repair shop), or any facility that does any vehicular repair work. Fluids disposed in these wells may contain organic and inorganic chemicals in concentrations that exceed the maximum contaminant levels (MCLs) established by the primary drinking water regulations (see 40 CFR Part ~~142~~ 141 and Utah Public Drinking Water Rules R309-103). These fluids also may include waste petroleum products and may contain contaminants, such as heavy metals and volatile organic compounds, which pose risks to human health.

R317-7-4. Identification of USDW'S and Exempted Aquifers.

The Executive Secretary shall identify USDW's and exempt aquifers following the procedures and based on the requirements outlined in 40 C.F.R. 144.7 and 40 C.F.R. 146.4.

R317-7-5. Prohibition of Unauthorized Injection.

5.1 Any underground injection is prohibited except as authorized by permit or as allowed under these rules.

5.2 No authorization by permit or by these rules for underground injection shall be construed to authorize or permit any underground injection which endangers a drinking water source.

5.3 Underground injections are prohibited which would allow movement of fluid containing any contaminant into underground sources of drinking water if the presence of that contaminant may cause a violation of any primary drinking water regulation (40 C.F.R. Part ~~142~~ 141 and Utah Public Drinking Water Rules R309-103), or which may adversely affect the health of persons. Underground injections shall not be authorized if they may cause a violation of any ground water quality rules that may be promulgated by the Utah Water Quality Board. Any applicant for a permit shall have the burden of showing that the requirements of this paragraph are met.

5.4 For Class I and III wells, if any monitoring indicates the movement of injection or formation fluids into underground sources of drinking water, the Executive Secretary shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting, including closure of the injection well, as are necessary to prevent such movement. In the case of wells authorized by permit, these additional requirements shall be imposed by modifying the permit or the permit may be terminated, or appropriate enforcement action may be taken if the permit has been violated.

5.5 For Class V wells, if at any time the Executive Secretary determines that a Class V well may cause a violation of primary

drinking water rules under R309-103, the Executive Secretary shall:

- A. require the injector to obtain an individual permit;
- B. order the injector to take such actions, including closure of the injection well, as may be necessary to prevent the violation; or
- C. take appropriate enforcement action.

5.6 Whenever the Executive Secretary determines that a Class V well may be otherwise adversely affecting the health of persons, the Executive Secretary may require such actions as may be necessary to prevent the adverse effect.

5.7 Class IV Wells

A. Prohibitions. The construction, operation or maintenance of any Class IV well is prohibited except as specified in 40 C.F.R. 144.13 (d) and 144.23(c) as limited by the definition of Class IV wells in [§] Section 7-3.4 of these rules.

B. Plugging and abandonment requirements. Prior to abandoning a Class IV well, the owner or operator shall close the well in a manner acceptable to the Executive Secretary. At least 30 days prior to abandoning a Class IV well, the owner or operator shall notify the Executive Secretary of the intent to abandon the well.

5.8 Notwithstanding any other provision of this section, the Executive Secretary may take emergency action upon receipt of information that a contaminant which is present in, or is likely to enter a public water system, may present an imminent and substantial endangerment to the health of persons.

5.9 Records. The Executive Secretary may require, by written notice on a selective well-by-well basis, an owner or operator of an injection well to establish and maintain records, make reports, conduct monitoring, and provide other information as is deemed necessary to determine whether the owner or operator has acted or is acting in compliance with these rules.

R317-7-6. Permit and Compliance Requirements - New and Existing Wells.

6.1 The owner or operator of any new injection well is required to obtain a permit from the Executive Secretary prior to construction unless excepted by R317-7-6.3. Compliance with construction plans and standards is required prior to commencing injection operations. Changes in construction plans require approval of the Executive Secretary.

6.2 Owners or operators of existing underground injection wells are required to obtain a permit from the Executive Secretary unless specifically excepted by Section 7-6.3 of these rules.

6.3

A. Existing and new Class V injection wells are authorized by rule, subject to the conditions in Section 7-6.5 of these rules.

B. Well authorization under this Section 7-6.3 expires upon the effective date of a permit issued in accordance with these rules or upon proper closure of the well.

C. An owner or operator of a well which is authorized by rule under this Section 7-6.3 is prohibited from injecting into the well:

- 1. Upon the effective date of a permit denial.
- 2. Upon failure to submit a permit application in a timely manner if requested by the Executive Secretary under Section 7-6.4 of these rules.

3. Upon failure to submit inventory information in a timely manner in accordance with Section 7-6.4(C) of these rules.

6.4

A. The Executive Secretary may require any owner or operator of a Class I, III or V well authorized under Section 7-6.3 to apply for and obtain an individual or area permit. Cases where permits may be required include:

1. The injection well is not in compliance with the applicable rules.

2. The injection well is not or no longer is within the category of wells and types of well operations authorized by Section 7-6.3.

3. Protection of an USDW.

B. Any owner or operator authorized under Section 7-6.3 may request a permit and hence be excluded from coverage under Section 7-6.3.

C. Owners or operators of all injection wells regulated by Section 7-6.3 shall submit the following inventory information to the Executive Secretary:

1. facility name and location;
2. name and address of legal contact;
3. ownership of facility;
4. nature and type of injection wells; and
5. operating status of injection wells.

Inventory information shall be submitted no later than January 19, 1984 for existing injection wells and before injection begins for new injection wells.

6.5 Additional requirements for large-capacity cesspools and motor vehicle waste disposal wells (see Class V well descriptions in Sections 7-3.5(B) and 7-3.5(O), respectively).

A. All existing large-capacity cesspools (operational or under construction by April 5, 2000) must close by April 5, 2005. See closure requirements in Section 7-6.6.

B. All new or converted large-capacity cesspools (construction not started before April 5, 2000) are prohibited.

C. All existing motor vehicle waste disposal wells (operational or under construction by April 5, 2000) must either be closed or their owners or operators must obtain a UIC permit.

1. For those wells located within a ground water protection area as designated by the Utah Division of Drinking Water (DDW), closure or permit application submittal must take place within one year of completion of DDW's ground water protection area assessment for the pertinent area.

2. If Utah does not complete all the local ground water protection area assessments by January 1, 2004, or by January 1, 2005 if an extension is granted to the state as described in 40 CFR 144.87(b), all motor vehicle waste disposal wells statewide located outside an area with a completed assessment must either be closed or their owners or operators must submit a UIC permit application by January 1, 2005 (or by January 1, 2006 if an extension is granted to the state as described in 40 CFR 144.87(b)). The closure deadline may be extended by the Executive Secretary for up to one year under certain conditions, such as intent to connect to a sanitary sewer.

3. If Utah does complete all the local ground water protection area assessments by January 1, 2004, or by January 1, 2005 if an

extension is granted to the state as described in 40 CFR 144.87(b), all motor vehicle waste disposal wells statewide located outside an area with a completed assessment must either be closed or their owners or operators must submit a UIC permit application by January 1, 2007.

4. If well closure is the option chosen, the closure requirements in Section 7-6.6 must be followed. The closure deadline may be extended by the Executive Secretary for up to one year under certain conditions, such as intent to connect to a sanitary sewer.

5. If obtaining a UIC permit is the option chosen, Utah Drinking Water Maximum Contaminant Levels (MCL's), Utah Ground Water Quality Standards, and EPA Adult Lifetime Health Advisories must be met at the point of injection while the permit application is under review. These standards must also be met at the point of injection under the terms of the permit, when issued. Utah Ground Water Protection Levels may be required to be met at downgradient ground water monitoring wells, if required to be installed. Such a permit may require pretreatment of the wastewater, and will require adherence to best management practices and monitoring of the quality of the injectate and any sludge generated.

D. All new or converted motor vehicle waste disposal wells (construction not started before April 5, 2000) are prohibited.

6.6 Class V well plugging and abandonment requirements.

A. Prior to abandoning a Class V well, the owner or operator shall close the well in a manner that prevents the movement of fluid containing any contaminant into an underground source of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141 or Utah Public Drinking Water Rules R309-103, or may otherwise adversely affect the health of persons.

B. The owner or operator shall dispose of or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, State, and local regulations and requirements.

C. The owner or operator must notify the Executive Secretary of intent to close the well at least 30 days prior to closure.

6.7 Conversion of motor vehicle waste disposal wells. In limited cases, the Executive Secretary may authorize the conversion (reclassification) of a motor vehicle waste disposal well to another type of Class V well. Motor vehicle wells may only be converted if: all motor vehicle fluids are segregated by physical barriers and are not allowed to enter the well; and, injection of motor vehicle waste is unlikely based on a facility's compliance history and records showing proper waste disposal. The use of a semi-permanent plug as the means to segregate waste is not sufficient to convert a motor vehicle waste disposal well to another type of Class V well.

6.8 Time for Application for Permit. Any person who performs or proposes an underground injection for which a permit is or will be required shall submit a complete application to the Executive Secretary in accordance with Section 7-9 a reasonable time before construction is expected to begin, except for new wells covered by an existing area permit.

R317-7-7. Area Permits.

A. The Executive Secretary may issue a permit on an area basis, rather than for each well individually, provided that the permit is for injection wells:

1. described and identified by location in permit application, if they are existing wells, except that the Executive Secretary may accept a single description of wells with substantially the same characteristics;

2. within the same well field, facility site, reservoir, project, or similar unit in the State;

3. operated by a single owner or operator; and

4. used to inject other than hazardous waste.

B. Area permits shall specify:

1. the area within which underground injections are authorized; and

2. the requirements for construction, monitoring, reporting, operation, and abandonment, for all wells authorized by the permit.

C. The area permit may authorize the permittee to construct and operate, convert, or plug and abandon injection wells within the permit area provided that:

1. the permittee notifies the Executive Secretary at such time as the permit requires, when and where the new well has been or will be located;

2. the additional well meets the area permit criteria; and

3. the cumulative effects of drilling and operation of additional injection wells are considered by the Executive Secretary during evaluation of the area permit application and are acceptable to the Executive Secretary.

D. If the Executive Secretary determines that any additional well does not meet the area permit requirements, the Executive Secretary may modify or terminate the permit or take appropriate enforcement action.

E. If the Executive Secretary determines the cumulative effects are unacceptable, the permit may be modified.

R317-7-8. Emergency Permits.

Notwithstanding any provision in this Part VII, the Executive Secretary is authorized to issue emergency permits for specific underground injections provided the conditions and requirements of 40 C.F.R. 144.34 are met.

R317-7-9. Permitting Procedures and Conditions.

9.1 Application for a Permit

A. Any person who is required to have a permit shall complete, sign and submit an application to the Executive Secretary.

B. When the owner and operator are different, it is the operator's duty to obtain a permit.

C. The application must be complete before the permit is issued.

D. All applicants shall provide the following information:

1. activities conducted by the applicant which require a permit;

2. name, mailing address and location of facility;

3. up to four Standard Industrial Code (SIC) codes which best reflect the principal products or services provided;

4. operator's name, address, telephone number, ownership status, and status as Federal, State, private, public or other entity;

5. whether the facility is located on Indian lands;
6. list of State and Federal environmental permits or construction approvals received or applied for and other relevant environmental permits;
7. topographic map (or other map if the topographic map is unavailable) extending one mile beyond the property boundary; depicting the facility and its intake and discharge structures, any hazardous waste, treatment, storage and disposal facilities; each injection well; and wells, springs, surface water bodies, and drinking water wells listed in public records or otherwise known;
8. a brief description of the nature of the business;
9. a map showing the injection well for which a permit is sought and the applicable area of review. Within the area of review, the map must show a number, or name, and location of all producing wells, injection wells, abandoned wells, dry holes, surface bodies of water, springs, mines, (surface and subsurface), quarries, water wells and other pertinent surface features including residences and roads. The map should also show faults, if known or suspected. Only information of public record is required to be included on this map;
10. a tabulation of data on all wells within the area of review which penetrates into the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of plugging and/or completion, any available water quality data, and any additional information the Executive Secretary may require;
11. maps and cross sections indicating the vertical limits of all underground sources of drinking water within the area of review, their position relative to the injection formation and the direction of water movement, where known, in each underground source of drinking water which may be affected by the proposed injection;
12. maps and cross sections detailing the geologic structure and lithology of the local area;
13. generalized maps and cross sections illustrating the regional geologic and hydrologic setting;
14. proposed operating data:
 - (a) average and maximum daily rate and volume of the fluid to be injected;
 - (b) average and maximum injection pressure; and
 - (c) source and an appropriate analysis of the chemical, physical, radiological and biological characteristics of injection fluids;
15. proposed formation testing program to obtain an analysis of the chemical, physical and radiological characteristics of and other information on the receiving formation;
16. proposed stimulation program;
17. proposed injection procedure;
18. schematic or other appropriate drawings of the surface and subsurface construction details of the system;
19. contingency plans to cope with all shut-ins or well failures to prevent migration of fluids into any underground source of drinking water;
20. plans (including maps) for meeting the monitoring requirements;
21. for wells within the area of review which penetrate the injection zone but are not properly completed or plugged, the

corrective action proposed to be taken;

22. construction procedures, as follows:

(a) For Class I Nonhazardous Wells: a cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program, which comply with Section 7-10.1(A) or 40 C.F.R. 146.12;

(b) For Class I Hazardous Waste Wells: cementing and casing program, well materials specifications and their life expectancy, logging procedures, deviation checks, and a drilling, testing and coring program, which comply with 40 C.F.R. 146.65 and 146.66;

(c) For Class III wells: cementing and casing program, logging procedures, deviation checks, and a drilling, testing, and coring program, which comply with section 7-10.1(B) or 40 C.F.R. 146.32.

23. A plan for plugging and abandoning the well, as follows:

(a) Class I Nonhazardous Well plans shall include information required by 40 C.F.R. 146.14(c) and Section 7-10.5 of these rules;

(b) Class I Hazardous Waste Well plans shall include information required by 40 C.F.R. 146.71(a)(4) and 146.72(a);

(c) Class III well plans shall include information required by 40 C.F.R. 146.34(c) and Section 7-10.5 of these rules.

24. A certificate that the applicant has assured, through a performance bond or other appropriate means, the resources necessary to close, plug or abandon the well. Class I Hazardous Waste wells shall also demonstrate financial responsibility pursuant to 40 C.F.R. 144.60 through 144.70;

25. such other information as may be required by the Executive Secretary.

9.2 Applicants shall keep records of all data used to complete permit applications and supplemental information for at least three years from the date of permit approval.

9.3 Permit applications and reports required under these regulations shall be signed in accordance with 40 C.F.R. Section 144.32.

9.4 Permit Provisions, Conditions and Schedules of Compliance.

Any permit issued by the Executive Secretary is subject to the conditions and requirements and shall be issued in accordance with the procedures outlined in 40 C.F.R. 144.51 (a)-(o) and (q), 144.52, 144.53, 144.54, 144.55 and 146.7, and 40 C.F.R. 124.3(a), 124.5(a),(c),(d) and (f), 124.6(a),(c),(d) and (e), 124.8, 124.10(a)(1)ii, and iii, (a)(1)(v), 124.10(b),(c),(d) and (e), 124.11, 124.12(a) and 124.17(a) and (c). The permit may specify schedules of compliance which require compliance not later than three years after the effective date of the permit.

9.5 Duration of Permits. Permits for Class I and Class V wells shall be effective for a fixed term not to exceed ten years. Permits for Class III wells shall be issued for a period up to the operating life of the facility. Each issued Class III well permit shall be reviewed by the Executive Secretary at least once every five years to determine whether it should be modified, revoked and reissued, or terminated. The Executive Secretary may issue any permit for a duration that is less than the full allowable term under this section.

9.6 Transfer, Modification, and Termination. Permits may be transferred, modified, revoked, reissued, or terminated by the Executive Secretary under the conditions and following the procedures

outlined in 40 C.F.R. 144.38, 144.39, 144.40, 144.41, and 144.36.

9.7 Confidentiality of Information. The following information when submitted as required by these rules cannot be claimed confidential:

- A. name and address of permit applicant or permittee; and
- B. information which deals with the existence, absence or level of contaminants in drinking water.

9.8 Waivers of Requirements

A. The Executive Secretary may waive the requirements of these rules only under the conditions and circumstances outlined in 40 C.F.R. Section 144.16.

B. The "two mile" distance provisions in Sections 7-3.1(B), 7-3.4, 7-10.1(A)(1), and 7-11 of these rules may be reduced by the Board on a case-by-case basis to less than two miles but in no event to less than 1/4 mile upon a finding by the Board that the distance reduction will not pose a threat to any USDW. The burden shall be on the applicant to demonstrate that hydrogeologic conditions, ground water quality in the area, and other environmental studies and information support the finding.

R317-7-10. Technical Requirements for Class I Nonhazardous and Class III Wells.

10.1 Construction Requirements

A. Class I Nonhazardous Well Construction Requirements

1. All Class I Nonhazardous wells as defined in Section 7-3.1(B) shall be sited so they inject beneath the lowermost formation containing, within two miles of the well bore, an USDW.

2. All Class I Nonhazardous wells shall be cased and cemented to prevent the movement of fluids into or between USDW's. The casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well. In determining and specifying casing and cementing requirements the following factors shall be considered:

- a. depth to the injection zone;
- b. injection pressure, external pressure, internal pressure, and axial loading;
- c. hole size;
- d. size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);
- e. corrosiveness of injected fluid, formation fluids, and temperatures;
- f. lithology of injection and confining intervals; and
- g. type or grade of cement.

3. All Class I Nonhazardous injection wells (except for municipal wells injecting noncorrosive wastes) shall inject through tubing with a packer set immediately above the injection zone or tubing with an approved fluid seal. Alternatives may be used with the written approval of the Executive Secretary if they provide a comparable level of protection.

The following factors shall be considered in determining and specifying requirements for tubing, packer or alternatives:

- a. depth of setting;

- b. characteristics of injected fluid;
- c. injection pressure;
- d. annular pressure;
- e. rate, temperature and volume of injected fluid; and
- f. size of casing.

4. Appropriate logs and other tests shall be conducted during the drilling and construction of new wells and a descriptive report interpreting the results of such logs and tests shall be prepared by a qualified log analyst and submitted to the Executive Secretary. At a minimum, such logs and tests shall include:

- a. deviation checks on holes constructed by drilling a pilot hole, and then enlarging the pilot hole;
- b. Such other logs and tests as may be required by the Executive Secretary. In determining which logs and tests shall be required, the following shall be considered for use in the following situations:
 - (1) for surface casing intended to protect USDW's:
 - (a) electric and caliper logs (before casing is installed);
 - (b) cement bond, temperature or density log (after casing is set and cemented);
 - (2) for intermediate and long strings of casing intended to facilitate injection:
 - (a) electric, porosity and gamma ray logs (before casing is installed);
 - (b) fracture finder logs;
 - (c) cement bond, temperature or density log (after casing is set and cemented).

5. At a minimum, the following information concerning the injection formation shall be determined or calculated for new wells:

- a. fluid pressure;
 - b. temperature;
 - c. fracture pressure;
 - d. physical and chemical characteristics of the injection matrix;
- and
- e. physical and chemical characteristics of the formation fluids.

B. Class III Construction Requirements

1. All new Class III wells shall be cased and cemented to prevent the migration of fluids into or between underground sources of drinking water. The Executive Secretary may waive the cementing requirement for new wells in existing projects or portions of existing projects where he has substantial evidence that no contamination of underground sources or drinking water would result. The casing and cement used in the construction of each newly drilled well shall be designed for the life expectancy of the well. In determining and specifying casing and cementing requirements, the following factors shall be considered:

- a. depth to the injection zone;
- b. injection pressure, external pressure, internal pressure, and axial loading;
- c. hole size;
- d. size and grade of all casing strings (wall thickness, diameter, nominal weight, length, joint specification, and construction material);
- e. corrosiveness of injected fluids and formation fluids;
- f. lithology of injection and confining zones; and
- g. type and grade of cement.

2. Appropriate logs and other tests shall be conducted during the drilling and construction of new Class III wells. A descriptive report interpreting the results of such logs and tests shall be prepared by a qualified log analyst and submitted to the Executive Secretary. The logs and tests appropriate to each type of Class III well shall be determined based on the intended function, depth, construction and other characteristics of the well, availability of similar data in the area of the drilling site, and the need for additional information that may arise from time to time as the construction of the well progresses. Deviation checks shall be conducted on all holes where pilot holes and reaming are used, unless the hole will be cased and cemented by circulating cement to the surface. Where deviation checks are necessary they shall be conducted at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling.

3. Where the injection zone is a formation which is naturally water-bearing the following information concerning the injection zone shall be determined or calculated for new Class III wells or projects:

- a. fluid pressure;
- b. fracture pressure; and
- c. physical and chemical characteristics of the formation fluids.

4. Where the injection zone is not a water bearing formation, only the fracture pressure must be submitted.

5. Where injection is into a formation which contains water with less than 10,000 mg/l TDS, monitoring wells shall be completed into the injection zone and into any USDW above the injection zone.

6. Where injection is into a formation which does not contain water with less than 10,000 mg/l TDS, no monitoring wells are necessary in the injection stratum.

7. Where the injection wells penetrate an USDW in a area subject to subsidence or catastrophic collapse, an adequate number of monitoring wells shall be completed into the USDW.

10.2 Operation Requirements

A. For Class I Nonhazardous and Class III wells it is required that:

1. Except during stimulation, the injection pressure at the wellhead shall not exceed a maximum which shall be calculated to assure that the pressure in the injection zone during injection does not initiate new fractures or propagate existing fractures in the injection zone. In no case shall the injection pressure initiate fractures in the confining zone or cause the movement of injection or formation fluids into an USDW.

2. Injection between the outermost casing protecting USDW's and the well bore is prohibited.

B. For Class I Nonhazardous wells, unless an alternative to tubing and packer has been approved, the annulus between the tubing and the long string of casings shall be filled with a fluid approved by the Executive Secretary and a pressure approved by the Secretary shall be maintained on the annulus.

10.3 Monitoring. The permittee shall identify types of tests and methods used to generate the monitoring data:

A. Class I Nonhazardous well monitoring shall, at a minimum, include:

1. the analysis of the injected fluids with sufficient frequency

to yield representative data of their characteristics;

2. installation and use of continuous recording devices to monitor injection pressure, flow rate and volume, and the pressure on the annulus between tubing and the long string of casing;

3. a demonstration of mechanical integrity pursuant to 40 C.F.R. 146.8 at least once every five years during the life of the well; and

4. the type, number and location of wells within the area of review to be used to monitor any migration of fluids into and pressure in the USDW, the parameters to be measured and the frequency of monitoring.

5. Ambient monitoring requirements for Class I nonhazardous wells found in 40 C.F.R. 146.13(d).

B. Class III monitoring shall, at a minimum, include:

1. the analyses of the physical and chemical characteristics of the injected fluid with sufficient frequency to yield representative data on its characteristics;

2. monitoring of injection pressure and either flow rate or volume semi-monthly, or metering and daily recording of injected and produced fluid volumes as appropriate;

3. demonstration of mechanical integrity pursuant to 40 C.F.R. 146.8 at least once every five years during the life of the well for salt solution mining;

4. monitoring of the fluid level in the injection zone semi-monthly, where appropriate and monitoring of the parameters chosen to measure water quality in the monitoring wells required by Section 7-10.2 of these rules, semi-monthly;

5. quarterly monitoring of wells required by Section 7-10.1(B)(7).

6. All Class III wells may be monitored on a field or project basis rather than an individual well basis by manifold monitoring. Manifold monitoring may be used in cases of facilities consisting of more than one injection well, operating with a common manifold. Separate monitoring systems for each well are not required, provided the owner/operator demonstrates that manifold monitoring is comparable to individual well monitoring.

7. In determining the number, location, construction and frequency of monitoring of the monitoring wells, the criteria in 40 C.F.R. 146.32(h) shall be considered.

10.4 Reporting Requirements

A. For Class I Nonhazardous injection wells reporting shall, at a minimum, include:

1. quarterly reports to the Executive Secretary on:

a. the physical, chemical and other relevant characteristics of injection fluids;

b. monthly average, maximum and minimum values for injection pressure, flow rate and volume, and annular pressure; and

c. the results of monitoring of wells in the area of review.

2. Reporting the results, with the first quarterly report after the completion of:

a. periodic tests of mechanical integrity;

b. any other test of the injection well conducted by the permittee if required by the Executive Secretary; and

c. any well work over.

B. For Class III injection wells reporting shall, at a minimum,

include:

1. quarterly reporting to the Executive Secretary on required monitoring;
2. results of mechanical integrity and any other periodic test required by the Executive Secretary reported with the first regular quarterly report after the completion of the test; and
3. monitoring may be reported on a project or field basis rather than individual well basis where manifold monitoring is used.

10.5 Plugging and Abandonment Requirements

A. Prior to abandoning Class I Nonhazardous and Class III wells, the well shall be plugged with cement in a manner which will not allow the movement of fluid either into or between underground sources of drinking water. The Executive Secretary may allow Class III wells to use other plugging materials if he is satisfied that such materials will prevent movement of fluids into or between underground sources of drinking water.

B. Placement of the cement plugs shall be accomplished by one of the following:

1. the Balance Method;
2. the Dump Bailer Method;
3. the Two-Plug Method; or
4. an alternative method approved by the Executive Secretary which will reliably provide a comparable level of protection to USDW's.

C. The well to be abandoned shall be in a state of static equilibrium with the mud weight equalized top to bottom, either by circulating the mud in the well at least once, or by a comparable method prescribed by the Executive Secretary, prior to the placement of the cement plug.

D. The plugging and abandonment plan required in Section 7-9 shall, in the case of a Class III well field which underlies or is in an aquifer which has been exempted, also demonstrate adequate protection of USDW's. The Executive Secretary shall prescribe aquifer cleanup and monitoring where he deems it necessary and feasible to insure adequate protection of USDW's.

10.6 Information to be Considered by the Executive Secretary. Requirements for information from well owners or operators and evaluations by the Executive Secretary for the issuance of permits, approval of well operation or well plugging and abandonment of Class I Nonhazardous injection wells are found in 40 C.F.R. 146.14 and Class III injection wells are found in 40 C.F.R. 146.34.

R317-7-11. Technical Requirements for Class I Hazardous Waste Injection Wells.

11.1 Applicability. Statements of applicability and definitions are described in 40 C.F.R. 146.61.

11.2 Minimum Siting Criteria. Minimum siting requirements for Class I hazardous waste wells are described in 40 C.F.R. 146.62.

11.3 Area of Review. The area of review is defined for Class I hazardous waste injection wells in 40 C.F.R. 146.63.

11.4 Corrective Action for Wells in the Area of Review. Corrective action requirements for wells found within the area of review are located in 40 C.F.R. 146.64.

11.5 Construction Requirements. Construction requirements for

all Class I hazardous waste injection wells are found in 40 C.F.R. 146.65.

11.6 Logging, Sampling, and Testing Prior to New Well Operation. Pre-operation requirements for logging, sampling, and testing of new wells are found in 40 C.F.R. 146.66.

11.7 Operating Requirements. Operation requirements for Class I hazardous waste injection wells are found in 40 C.F.R. 146.67.

11.8 Testing and Monitoring Requirements. Testing and monitoring requirements are found in 40 C.F.R. 146.68.

11.9 Reporting Requirements. Reporting requirements are found in 40 C.F.R. 146.69.

11.10 Information to be Evaluated by the Executive Secretary. Requirements for information from well owners or operators and evaluations by the Executive Secretary for the issuance of permits, approval of well operation or well plugging and abandonment are found in 40 C.F.R. 146.70.

11.11 Closure. Well closure requirements are found in 40 C.F.R. 146.71.

11.12 Post-closure Care. Post-closure care requirements for Class I hazardous waste injection wells and facilities are found in 40 C.F.R. 146.72.

11.13 Financial Responsibility for Post-closure Care. Financial responsibility requirements for care of a Class I hazardous waste injection well during post-closure are found in 40 C.F.R. 146.73.

11.14 Requirements for Wells Injecting Hazardous Waste. Requirements for injection of waste accompanied by a manifest are found in 40 C.F.R. 144.14.

R317-7-12. Hazardous Waste Injection Restrictions.

12.1 Purpose, Scope, and Applicability. Standards are found in 40 C.F.R. 148.1.

12.2 Definitions. Definitions are found in 40 C.F.R. 148.2.

12.3 Dilution Prohibited as a Substitute for Treatment. The prohibition is found in 40 C.F.R. 148.3.

12.4 Procedures for Case-by-case Extensions to an Effective Date. Requirements are found in 40 C.F.R. 148.4.

12.5 Waste Analysis. Requirements are found in 40 C.F.R. 148.5.

12.6 Waste Specific Prohibitions - Solvent Wastes. Prohibitions and requirements are found in 40 C.F.R. 148.10.

12.7 Waste Specific Prohibitions - Dioxin - Containing Wastes. Prohibitions and requirements are found in 40 C.F.R. 148.11.

12.8 Waste Specific Prohibitions - California List Wastes. Prohibitions and requirements are found in 40 C.F.R. 148.12.

12.9 Waste Specific Prohibitions - First Third Wastes. Prohibitions and requirements are found in 40 C.F.R. 148.14.

12.10 Waste Specific Prohibitions - Second Third Wastes. Prohibitions and requirements are found in 40 C.F.R. 148.15.

12.11 Waste Specific Prohibitions - Third Third Wastes. Prohibitions and requirements are found in 40 C.F.R. 148.16.

12.12 Waste Specific Prohibitions - Newly Listed Wastes. Prohibitions and requirements are found in 40 C.F.R. 148.17.

12.13 Petitions to Allow Injection of a Waste Prohibited Under Sections 7.11 and 7.12. Requirements for petitions to allow injection

of prohibited wastes are found in 40 C.F.R. 148.20.

12.14 Information to be Submitted in Support of Petitions.
Requirements are found in 40 C.F.R. 148.21.

12.15 Requirements for Petition Submission, Review and Approval
or Denial. Requirements are found in 40 C.F.R. 148.22.

12.16 Review of Exemptions Granted Pursuant to a Petition.
Requirements are found in 40 C.F.R. 148.23.

12.17 Termination of Approved Petition. Petition termination
requirements are found in 40 C.F.R. 148.24.

R317-7-13. Public Participation.

In addition to hearings required under the State Administrative Procedures Act 63-46b, et. seq. and proceedings otherwise outlined or referenced in these regulations, the Board or its duly appointed representative will investigate and provide written response to all citizen complaints duly submitted. In addition, the Board shall not oppose intervention in any civil or administrative proceeding by any citizen where permissive intervention may be authorized by statute or rule. The Board will publish notice of and provide at least thirty (30) days of public comment on any proposed settlement of any enforcement action.

KEY: water quality, underground injection control
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19-5